A Methodological Review of Research in *Therapeutic Recreation Journal* from 1986 to 1990

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The quality of research in therapeutic recreation is an important issue for today's therapeutic recreation professionals. Pressures for efficacy studies to prove the worth of therapeutic recreation as an intervention are prominent. The purpose of this study was to examine the type and quality of research methodology in articles published in the *Therapeutic Recreation Journal* in the years 1986 through 1990. A total of 46 articles were reviewed for methodological adequacy on five criteria areas. Results indicated that use of theory, sophistication of designs, strength of measurement, and application continue to be areas of concerns in therapeutic recreation research. Implications and recommendations for practitioners and researchers are presented.

KEY WORDS: *research, methodological adequacy, theoretical base*

The status of research in therapeutic recreation is a concern that has attracted increased attention in recent years. According to Fawcett and Downs (1986), the function of research is either to test or to generate theory. Additionally, the value of research is based on "the logical consistency between the theoretical, design, and analysis components of an investigation" (p. 70). Professional literature about research in therapeutic recreation has suggested that the quality of research in the field might warrant examination (cf. Iso-Ahola, 1988; Witt, 1988). Determining methodological quality, or the

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soundness of research studies, is important in the development of a professional body of knowledge in therapeutic recreation.

Iso-Ahola (1988) stated that although therapeutic recreation can be considered one of the most advanced areas of recreation studies, the amount and quality of research published is lacking. Several weaknesses in therapeutic recreation research have been identified. For example, Iso-Ahola (1988) noted that little research exists about the efficacy of therapeutic recreation for people with disabilities. Similarly, the Temple National Consensus Conference on the Benefits of Therapeutic Recreation in Rehabilitation (Coyle, Kinney, Riley, & Shank, 1991) generated recommendations that repeatedly cited efficacy as a major need in therapeutic recreation research. Health issues that include accountability and third party reimbursement also have mandated more and better designed research studies to prove the worth of therapeutic recreation as a viable intervention in rehabilitation arena (cf. Malkin, 1993).

Another concern in therapeutic recreation research has been the limited types of methodologies being used. The need for a greater variety of methods has been recommended to assure that the interventions under investigation are represented accurately (cf. Compton, 1989; Coyle, et al., 1991; McCormick, Scott, & Dattilo, 1991). Mannell (1983) and Iso-Ahola (1988) both noted an overuse of the survey method in therapeutic recreation research. Additionally, the quality of research design has been a serious concern. For example, the use of control groups (Dattilo, McCormick, & Scott, 1991; Mannell, 1983) and randomization (Mannell, 1983) traditionally have been poor.

More follow-up and longitudinal studies have been recommended in therapeutic recreation research (Caldwell, 1991; Compton, 1989; Dunn, 1991; Lyons, 1991; Witt, 1988). Much of the research in leisure studies to date is what Iso-Ahola (1986) called "shotgun affairs," studies standing alone with little regard for systematically developing or continuing existing research ideas. Research in therapeutic recreation has not avoided this limitation.

Riddick, DeSchriver, and Weissinger (1984) determined that leisure research in general needed to address the limited use of conceptual and theoretical frameworks. Ellis (1993) noted that the "dearth of theory" (p. 50) in therapeutic recreation is a major problem in therapeutic recreation research. Shank, Kinney, & Coyle (1993) clearly stated that therapeutic recreation research should be "driven by a theoretical framework" (p. 305). Therapeutic recreation research, however, has demonstrated a poor use of theory as well as limited research generated from other disciplines (Rickards, 1985; Witt, 1988). Witt (1988) also identified poor validity and reliability in therapeutic recreation studies as seriously compromising the confidence with which readers can believe and apply the results of research presented.

For a profession to improve, it must allow critical self-examination (Riddick et al., 1984). The field of therapeutic recreation must examine its status as an effective component of health care. Research that can establish efficacy and increase the body of knowledge becomes essential. The many social, political, and economic changes occurring today in society pose a potential threat to any health-oriented field that cannot justify its existence. To address these changes and survive as a profession, as well as to guarantee quality service to its consumers, the field of therapeutic recreation must explore its own worth. Examining the quality of therapeutic research and addressing the weaknesses will be essential in the next decade. The purpose of this study, therefore, was to examine the type and quality of research methodology in articles published in the *Therapeutic Recreation Journal* (TRJ) between the years 1986 and 1990. Specifically, this study (a) evaluated the research method-

ology against selected criteria, (b) identified specific weaknesses in methodology, and (c) developed implications for therapeutic recreation researchers and practitioners.

The conceptual framework for this study, therefore, was methodological soundness. Waltz and Bausell (1981) defined research as a "systematic, formal, rigorous, and precise process employed to gain solutions to problems and/or to discover and interpret new facts and relationships" (p. 1). The field of therapeutic recreation clearly is in need of determining solutions to a myriad of problems that affect the viability of the field as well as the care for its consumers. Using the premise that the purpose of research is to test or to generate theory (Fawcett & Downs, 1986), adequacy of methodology, or methodological soundness, becomes essential in this process. Weakness in methodology can jeopardize the assurance with which one can trust the results of a study. Empirical adequacy, or the "influence of the study results on theory generation or refinement" (p. 64), assures that the conclusions reflect the data (Fawcett & Downs, 1986). For research to be useful, then, its methodology must be sound.

Method

Sample. The sample chosen for this study was delimited to research articles in the *Therapeutic Recreation Journal* from 1986 through 1990. Although at the time of the study several journals specifically for therapeutic recreation existed in North America, (e.g., *Therapeutic Recreation Journal, Journal of Leisurability,* and *Annual in Therapeutic Recreation). Therapeutic Recreation Journal* was the only one selected for two reasons. First, this study was conducted in the Spring and Summer of 1991. At that time, the *Annual in Therapeutic Recreation* was beginning its second year and had a new editor. Second, the *Journal of Leisurability* published only six research articles during the years 1986 to 1990. The researchers determined that the articles from these two journals were not sufficient in number to include in this study. Inclusion criteria for the *Therapeutic Recreation Journal* were: (a) only articles that were identified under the heading "Research" in the table of contents, and (b) only those issues published during the five years of 1986 through 1990. These dates of 1986 through 1990 were chosen to update previous works by Mannell (1983), Compton (1984) and Witt (1988) that addressed the topic of therapeutic recreation research up until 1986. Additionally, a study of the "current" status of therapeutic recreation research warranted that the time frame for this study span only recent years. A total of 47 articles were eligible for this sample. One was eliminated because although it was listed under the research heading, it addressed research methodology and did not report findings from a research study.

Instrument and procedure. A modified version of the evaluation instrument that Riddick et al. (1984) used for an examination of research methodology for the *Journal of Leisure Research* was used in this study. The first questions gathered information dealing with author affiliation, titles, and topics. Subsequent areas specifically addressed the methodological qualities.

Riddick et al.'s (1984) original instrument evaluated most of the articles' elements using a scale that ranged from "none" (criterion not addressed), "poor" (unclear if criterion addressed/met), "adequate" (criterion addressed/met), to "good" (criterion addressed/met and exceeded). Modifications to the original instrument for the present study consisted of only three changes. First, questions were added that included qualitative methods and techniques in the design and analysis sections since the original instrument addressed only quantitative methods. Second, a question that addressed the presence and quality of recommendations made in each study was added. Finally, the conclusion section of the origi-

nal instrument which asked for only "yes" or "no" answers on four criteria (i.e., congruence of conclusions and research problem, limitations, implications, and recommendations) was expanded to "none," "poor," "adequate," or "good" on the modified version.

Other than the changes indicated, the evaluation criteria for this study were the same as those used by Riddick et al. (1984). The criteria consisted of five major areas: problem statement, data characteristics, data analysis, conclusions, and overall rating.

Problem statement addressed four subcriteria: (a) clarity of objectives (or how well the author(s) stated the intentions of the study); (b) theoretical (or conceptual) base clearly identified as the framework for the study; (c) clarity of hypothesis or research questions (including hypotheses that were implied but not clearly stated); and (d) operationalization of concepts so that the reader has concrete knowledge of the concepts addressed. The criteria addressing objectives and operationalization were evaluated using the aforementioned scale ranging from "none" to "good," while the existence of theory and hypotheses were judged using a "yes/no" response.

The information collected from the section on data characteristics was largely demographic and descriptive. With the exception of reliability and validity, the criteria were not counted in the overall evaluation. Data characteristics evaluated eight criteria: (a) the presence and type of study design; (b) data collection method (i.e., observation, questionnaire, interview); (c) the location of the study (United States or other country); (d) sampling universe (from where the sample was taken); (e) sampling methods (i.e., probability, convenience); (f) sample size; and (g) validity and reliability (including discussion and use of statistics where appropriate). These criteria either reported raw numbers and percentages or were rated by a "yes/no" scale.

Data analysis addressed four criteria: (a) justification of analysis techniques; (b) level of analysis (univariate, bivariate, multivariate or enumeration, constant comparison, analytic induction); (c) type of analysis employed; and (d) use of tests of significance where appropriate. These were rated using the "none" to "good" scale.

The conclusions section of the instrument evaluated four criteria: (a) congruence between purpose and conclusions; (b) recognition of limitations; (c) implications for researchers and/or practitioners; and (d) recommendations of the study. The conclusions criteria were rated using the "none" to "good" scale as well.

The overall rating was based on the soundness of the study as a whole. Each reviewer gave a subjective score ranging from "poor" to "good" to represent each article's methodological adequacy.

Reliability. Previous methodological analyses (Riddick et al. 1984; Stokes & Miller, 1975) utilized two separate reviewers to assure reliability for the review. Similarly, the current study also determined interrater reliability by comparing the evaluations of two different reviewers. Both reviewers practiced on sample reviews and met for discussion to become familiar with the process and to identify potential barriers prior to engaging in the analysis. Practice analyses yielded high levels of agreement (85% or better). At the time of analysis, one reviewer was a graduate student completing the master's program in therapeutic recreation at a major research university. She was in the last semester of her program and had completed her own research. The other reviewer was a faculty member in therapeutic recreation at the same university. Each reviewer evaluated each of the 46 articles independently. Following initial independent reviews, the reviewers discussed their evaluations. Initial interrater agreement was 77% ranging from 64% to 93% on the five categories for all articles. For areas of disagreement, in depth clarification and justifica-

tion was conducted to reach consensus on all articles.

Results

Demographics were collected on authors, their affiliations, and the topics of the articles. Results showed that the articles represented 49 different institutions; 32 of which were colleges and universities and 17 agencies of practice. Thirty-three percent of the articles had single authors while the remaining 67% of the articles had multiple authors. The length of articles ranged from six to fifteen pages. Results of the five criteria areas of the methodological review are described below.

Problem statement. Eighty-nine percent of the articles reviewed contained a clear problem statement (i.e., were rated adequate or good), however, 11% were considered less than adequate. Those judged less than adequate failed to indicate directly the intent of the study. In these cases, the reader was required to complete the article to determine what the research was attempting to do.

Only 26% of the articles had a defined theoretical or conceptual basis for the study. The most common theory/conceptual bases were the self-efficacy theory (n = 4) by Bandura (1977) and the Continuity Theory (n = 2) by Atchley (1980). Other theories included attribution, cognitive, learned helplessness, flow, plasticity, and personality theories, each of which was used only once.

Hypotheses or research questions were stated clearly in 43% of the articles. Research questions were not stated, but implied, in 37% of the articles. Twenty percent, however, did not propose research questions or hypotheses at all. The majority of the articles (82%) operationalized appropriate concepts clearly. Seventeen percent were judged to be less than adequate. See Table 1.

Table 1.
Methodological Adequacy of Problem Statement Criteria (N = 46)

	% (n)
Objectives	
Poor	11% (5)
Adequate	67% (31)
Good	22% (10)
Theoretical Base	
No	74% (34)
Yes	26% (12)
Hypotheses	
No	20% (9)
No, but implied	37% (17)
Yes	43% (20)
Concepts Operationalized	
Poor	17% (8)
Adequate	67% (31)
Good	15% (7)

Note. Totals may not equal 100% due to rounding error.

Data Characteristics. Eighty-seven percent of the studies used quantitative methods while 4% used qualitative methods. Nine percent used both qualitative and quantitative methods. The most common quantitative research designs were the experimental (37%), with just over half using a control group, and the survey design (30%). Approximately 9% of the studies used an interview design, while another 9% used a single subject design, and 4% conducted case studies. Eleven percent used other methods including observation, experience sampling, validity studies, and the Delphi technique. Only 24% of the studies used probability sampling, while 63% of the studies used non-probability samples (convenience or purposive). Nine percent of the studies used both probability and convenience sampling methods. Four percent of the studies did not report sample techniques.

Descriptive statistics showed that the size of the samples ranged from two to 1800 subjects. Most of the studies were conducted in

the United States (87%), with the remaining 13% conducted in Canada. Response rates ranged from 38% to 100% with a mode of 95% (n = 26) return. Several different population types were examined. Although no disability group stood out, the most commonly studied disability group was people with physical disabilities (17%). Older adults and psychiatric populations, including addictive behaviors, were addressed in 13% of the studies each. Subjects with autism and mental retardation, recreation and related health care agencies, and educator/student groups each comprised 9% of those addressed. Families of people with disabilities, and people with eating disorders each made up 4% of the total. The remaining 9% of the studies identified other disability groups including people with multiple disabilities, groups comprised of a variety of disabilities, and individuals without disabilities, with no group making up more than 2% of the total.

Forty eight percent of the studies addressed validity, however, only 30% discussed it. For those studies where statistics were appropriate (n = 25), only 16% cited

Table 2.

Methodological Adequacy of Data Characteristics Criteria (N = 46)

	% (n)		% (n)
Methods		**Population Addressed**	
Quantitative	87% (40)	Physical disabilities	17% (8)
Qualitative	4% (2)	Older Adults	13% (6)
Both quantitative & qualitative	9% (4)	TR Professional Organizations	13% (6)
Study design		Psychiatric (incl. addictions)	13% (6)
Survey/questionnaire	30% (14)	Recreation & Health Agencies	9% (4)
Experimental	37% (17)	Educators/Students	9% (4)
-with control	20% (9)	Mental Retardation/Autism	9% (4)
-without control	17% (8)	Eating Disorders	4% (2)
Interview	9% (4)	Families of clients/participants	4% (2)
Single subject	9% (4)	Other (multiple disabilities, combination of disabilities, non-disabled)	9% (4)
Case study	4% (2)	**Validity**	
Other (observation, validity, experience sampling, Delphi)	11% (5)	Addressed validity	48% (22)
Sampling		Discussed validity	30% (14)
Probability	24% (11)	Used statistics to report (n = 25)	16% (4)
Non-probability (convenient or purposive)	63% (29)	**Reliability**	
Both Probability and Non-probability	9% (4)	Addressed reliability	63% (29)
Not Stated	4% (2)	Discussed reliability	58% (27)
Location		Used statistics to report (n = 32)	81% (26)
United States	87% (40)		
Canada	13% (6)		

any statistics for validity. Sixty-three percent of the studies addressed the use of reliability and 58% discussed it. Again, for those studies for which statistics of reliability were appropriate (n = 32), 81% cited statistics for reliability. See Table 2.

Data Analysis. Only 59% of the articles gave adequate to good justification for the analytic techniques used in the study. Twenty percent were judged to be poor in justification and 22% did not offer any justification or explanation at all.

For the studies that used quantitative methods, 9% used multivariate statistical procedures for analysis while 66% used bivariate statistical procedures to analyze data. For the purposes of this study, bivariate statistics were defined as correlation, analysis of variance, or T-tests (Blalock, 1983). The remaining 25% used univariate statistics such as frequencies and percentages. Six studies used qualitative methods. Specific techniques included enumeration (33%), constant comparison (33%), and analytic induction (33%). Seventy percent of the studies (n = 43) used tests of significance. See Table 3.

Conclusions. Congruence between the research questions and the conclusions of the study were adequate or good in 93% of the studies. Only twenty-eight percent of the studies, however, were evaluated as adequate or good in the recognition of limitations of the study, while 46% did not recognize or did not report any limitations at all. Fifty-three percent of the studies reported adequate to good implications for the practitioner, while 30% were judged as poor. Seventeen percent of the studies reported no implications. Thirty-seven percent of the studies were judged adequate or good in offering recommendations for the study, while 41% offered no recommendations. It should be noted that in several articles implications and recommendations were not presented separately. The reviewers made subjective assessment based on the content regarding whether the section seemed to be intended as implications or recommendations. See Table 4.

Table 3.

Methodological Adequacy of Data Analysis Criteria (N = 46)

	% (n)
Justification of analytic technique	
None	22% (10)
Poor	20% (9)
Adequate	48% (22)
Good	11% (5)
Highest Level of Analysis	
Quantitative methods (n = 44)	
-Multivariate statistics	9% (4)
-Bivariate statistics	66% (26)
-Univariate statistics	25% (9)
Qualitative methods (n = 6)	
-Enumeration	33% (2)
-Constant comparison	33% (2)
-Analytic induction	33% (2)
Tests of Significance (n = 43)	
No	30% (13)
Yes	70% (30)

Summary Rating. The four criteria scales (excluding descriptive data from Data Characteristics) were considered together using a 5-point Likert scale to determine one score for the methodological quality for each of the articles examined. All criteria were weighed equally. While none of the studies was rated "very strong" or "very weak," 7% were considered "strong," and 11% were considered "weak." The remaining studies (82%) were rated "adequate" for overall methodological soundness.

Discussion

Before discussion, it is important to note a potential limitation of this study. The present study followed the model of previous methodological reviews in leisure research (e.g., Riddick et al., 1984; Stokes & Miller, 1975). Although these reviews employed

Table 4.

Methodological Adequacy of Conclusions Criteria (N = 46)

	% (n)
Congruence	
Poor	7% (3)
Adequate	67% (31)
Good	26% (12)
Recognition of Limitations	
None	46% (21)
Poor	26% (12)
Adequate	17% (8)
Good	11% (5)
Implications for the Practitioner	
None	17% (8)
Poor	30% (14)
Adequate	44% (20)
Good	9% (4)
Recommendations	
None	41% (19)
Poor	22% (10)
Adequate	30% (14)
Good	7% (3)

only two reviewers for each article, the potential for problems became evident within this study. Initial interrater reliability seemed relatively low and required discussion to reach agreement on several studies. It is possible that the abilities of the two reviewers differed too greatly given their credentials. While precautions such as training and practice were taken to assure fairness between the two reviewers, the presence of a third reviewer might have facilitated earlier consensus. It is equally possible, however, that a third reviewer may have created further disagreement.

The purpose of this study was to evaluate the methodological quality of research articles in *Therapeutic Recreation Journal* from 1986 to 1990. Perhaps the most striking result of this analysis is that although some areas of therapeutic recreation research methodology show improvement, many areas have not changed substantially since the previous evaluations discussed (i.e., Mannell, 1983; Iso-Ahola, 1988; Witt, 1988). Based on the results, several concerns regarding methodological soundness of the sample in question can be raised. First, relatively few researchers based their studies on any theoretical or conceptual framework. As noted by Fawcett and Downs (1986), theories provide a structure for interpretation of data. A theory's function is to "describe, explain, or predict limited properties of reality" (Fawcett & Downs, 1986, p. 3). Sylvester (1991) stated that a profession must have a valid body of theory for practitioners to know not only what and how to do, but also why they do it. Lack of a theoretical base, therefore, defeats the purpose of the research. Without generating or testing theory, little is contributed to the body of knowledge.

Second, the types and sophistication of research designs have not changed much since Iso-Ahola's assessment of research up to 1982. Although used less often than a decade ago, survey research is still a common technique. The use of survey methods decreased greatly from 68% of the articles to 38% between 1978–1986 (Witt, 1988) but these data indicated that it plateaued and was still used almost one third of the time between 1986 and 1990 in this study. While survey research is a valid method of inquiry, researchers should be careful not to rely upon it too heavily. The experimental method was also popular according to the data, however, just over half of the experimental studies used a control group. As Dattilo et al. (1991) noted, much research in therapeutic recreation is actually quasi-experimental in which "the control of extraneous variables is often sacrificed in favor of realism" (p. 86). While attaining realism, the loss of control compromises the integrity of the study. Therefore, for purposes of

determining efficacy, researchers should consider other methodological approaches for studies where using a control group is not possible.

Future application of different and non-traditional methods should be considered for two reasons. First, human behavior, especially that of people with disabilities, cannot always be measured by traditional quantitative approaches. Interpretive methods, for example, offer a good way to understand unique experiences of selected populations (Henderson, 1991; Taylor & Bogdan, 1984). Malkin and Howe (1993) supported qualitative research for therapeutic recreation since therapeutic recreation is a "process that yielded psychosocial outcomes" (p. 234) and these outcomes are often best understood by observations and conversation rather than testing. Other non-traditional methods such as single subject research address many of the problems of experimental research such as low sample size and diversity within one sample. The results of this study showed that non-traditional types of designs such as single subject or qualitative methodologies were used to some extent. This finding is encouraging since it is becoming clear that the uniqueness of some types of disabilities are best explored through alternative measures. Other methods such as case studies, in-depth interviews, and experience sampling were noted among this sample and should be encouraged further to address some of the unique circumstances of people with disabilities.

A second reason that therapeutic recreation research should use alternative methods is the growing demand for efficacy research in therapeutic recreation. Currently, traditional formal quantitative pre and post test designs are accepted as rigorous and as yielding efficacious results. As noted, however, researching people with disabilities poses several barriers to using experimental designs. For example, ethical considerations regarding denial of services to potential control groups as well as difficulties with probability sampling due to small samples (Dattilo et al., 1991) seriously compromise the integrity of an experimental design. Qualitative methods, for example, when applied appropriately contain just as much rigor and control as traditional quantitative approaches thus lending equally to efficacy concerns (Guba & Lincoln, 1981; Henderson, 1991; Stumbo and Little, 1993).

Using multiple methods or triangulation can address problems of efficacy as well. Triangulation is the "use of several different research methods to test the same finding" (Babbie, 1992, p. 109). Babbie (1992) noted how triangulation addresses the problem of inherent weaknesses in individual research methods. Howe and Keller (1988) suggested that triangulation of studies allowed qualitative methods to enrich a quantitative design and "enable greater depth of understanding" (p. 44).

A related concern generated by this study centered around the fact that many researchers only mentioned reliability and validity of instruments but did not elaborate on them. Additionally, few of these studies offered discussion or statistics concerning rigor. Without the assurance of reliable and valid results, conclusions can be considered suspect at best, thus compromising accountability for efficacy.

A final concern about methodological soundness raised in this study stems from the fact that many discussions ended abruptly rather than addressing limitations, suggesting implications, or offering recommendations for practitioners or researchers. As noted, almost half of the articles did not address limitations, just over half did not address implications, and more than a third did not address recommendations. If research is to contribute to the body of knowledge, it must encourage replication and longitudinal pursuits through the analysis of study limitations. Implications and recommendations should be discussed to make

the results usable for both researchers and practitioners for future pursuits and applications.

Implications and Recommendations

As noted, the consequences of poorly designed and executed research studies may be severe for the field of therapeutic recreation. Some of the problems noted in this sample were identified almost ten years ago in a similar methodological review of leisure research. Riddick, et al. (1984) identified poor use of theoretical bases, dominance of survey design, and problems with reporting reliable and valid measures as methodological weaknesses of research reported in the *Journal of Leisure Research,* 1978 to 1982. Researchers and practitioners in the field of therapeutic recreation must learn from their past and the past of other researchers to recognize the weaknesses in therapeutic recreation research and work to eliminate them.

Several implications may be drawn from this study. First, professionals who undertake research must be mindful of the ultimate purposes of research: testing and building theory to contribute to the body of knowledge. Researchers must take the responsibility to be familiar with all criteria for adequacy. Many recommendations have been offered for how to improve the status of research in therapeutic recreation (cf. Compton, 1989; Coyle, Kinney, & Shank, 1991; Iso-Ahola, 1988; Witt, 1988). Based on the results of this study, it seems that knowledge of research must begin early in the professional's career so that entry level therapeutic recreation specialists can be good consumers and developers of research. College and university programs can begin to address this need through requiring research methods courses for undergraduates rather than only on the master's levels. Faculty may want to evaluate their research methods course objectives to assure that criteria of methodological adequacy as well as the identification of relevant theories are addressed sufficiently.

Additionally, these programs should incorporate avenues for teaching alternative methodologies beyond strictly quantitative designs. In addition to qualitative and single subject designs, other non-traditional designs and techniques such as focus groups (e.g., Morgan, 1988), experience sampling (e.g., Csikszentmihalyi & LeFevre, 1989), participant observation (e.g., Jorgensen, 1989), and interviewing (e.g., Malik, Ashton-Shaeffer, & Kleiber, 1991) can be particularly useful when conducting research with people with disabilities.

Second, for those practitioners already in the field, a structured, week long institute like the Therapeutic Recreation Management School or the Recreation Therapy Institute could provide research skills and insights not available through one or two classes or workshops. Colleges or university sponsorship of a Therapeutic Recreation Research Institute could address issues of designing, implementing, and evaluating research in the field of therapeutic recreation.

A third implication from this study is developing creative ways to bring research skills to the work place. For departments that work closely with other rehabilitation disciplines such as occupational therapy or physical therapy, a collaborative request for a research consultant position might be feasible. While adding a full-time staff member to a therapeutic recreation department might be near to impossible for most departments, a mutual request from several departments (in essence four one quarter time positions) might secure a consultant who would be responsible to help in designing, implementing, and analyzing research for any of the disciplines involved.

Fourth, some of the weaknesses in therapeutic recreation research identified by this study are indirectly related to lack of time and money. Practitioners and educators have limited resources and thus may pursue

only those designs and procedures that are within their financial and time constraints. Unfortunately, some rigor within a research design might be sacrificed as a result of these constraints. Professional organizations on state to national levels should attempt to facilitate opportunities to make funds available for research pursuits in therapeutic recreation. Securing funding on the local, state, regional, and national levels to subsidize and encourage rigorous designs and implementation could be the key to eliminating some of these constraints.

Finally, journals such as the *Therapeutic Recreation Journal, the Journal of Leisurability,* and *the Annual in Therapeutic Recreation* that accept research articles should consistently re-examine their research criteria. Professional journals that require rigorous reviews and acceptance criteria can serve as catalysts to improved research quality.

The essential element of improving the quality of therapeutic recreation research still lies within the commitment of the researcher and the enlightenment of the reader. Although good research is challenging to design, many flaws and weaknesses can be avoided. Now, more than ever, therapeutic recreation needs efficacy, accountability, and credibility. Good, logical, well developed research can contribute to that goal.

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